

French economy at a crossroads

The nation's high-technology industry and agriculture are now in jeopardy; the key to recovery is the use of French technology to develop the Third World. William Engdahl reports.

Under the dirigist strategy of President Charles de Gaulle during the postwar period, France built up the most important concentration of major industry in the state sector of any Western nation. This is the high-technology concentration that made possible the breakthrough to industrial operation of the Super Phénix fast breeder reactor; it is the potential which could still be brought to bear to develop the Third World and revive the collapsing economy of Europe.

France today owns the world's third-largest aluminum industry—Pechiney; one of the world's largest auto and vehicle manufacturers—Renault; and one of Europe's largest chemical industries—Rhône-Poulenc. The steel sector is primarily under the direction of Sacilor and Usinor, both state-owned, while more than 90% of all electric generation is run by the state-owned Electricité de France. The French electronics and aerospace industry—one of the world's most advanced—is dominated by such state firms as Thomson CSF and CGE.

Nuclear energy capabilities

The supply of energy has been the Achilles Heel of French industry since before World War I, when Anglo-Russian petroleum interests, with the complicity of the Rothschilds and major French-Swiss bank families, acted to sabotage development of vast oil discoveries in Algeria.

The major intervention of enlightened national self-interest was the tenacious effort by de Gaulle, immediately following the war, to create a French nuclear industry—both military and civilian—through the founding of the Commissariat à l'énergie atomique (CEA) in 1945. As a result of the policy commitments following the 1973 Oil Shock, France launched the world's most ambitious civilian nuclear power program. Unlike every other OECD nation, however, France has not abandoned its nuclear commitment. As a result, in August 1985, the nuclear share of French electricity generation topped 70.7% of total electric power generation.

As detailed engineering studies have demonstrated, electric power generation, more than other existing forms of energy, can be seen as the "locomotive" of future industrial

growth. From this standpoint, France's industrial economy is better poised than any other, to actualize high rates of capital-intensive industrial growth. Electricité de France (EDF), the state-owned utility which owns and produces the entirety of nuclear electricity, and is responsible for 90% of the nation's total electric production, possesses the world's most detailed studies of comparative fuel costs for nuclear-generated electricity. These are far more reliable figures than the sporadic data available from U.S. private utilities (which are biased upward by the political costs of constructing nuclear plants). The latest estimates show total comparative costs, including initial plant investment, fuel, and operation, as follows:

Nuclear	Coal	Oil
100	150	320

This means nuclear energy is fully one-third cheaper than its nearest competitor, coal, and vastly cheaper than oil, even with falling prices. These figures are relative. In centimes/kilowatt-hour, for 1982, EDF found that nuclear cost 19.2 c/kwh, while coal was 31.0. By 1984, with higher construction costs, this had altered slightly to 18.8 for nuclear, 26.8 for coal, and 42.5 for oil. Even more important than such cost accounting comparisons, the energy flux density of nuclear electricity is orders of magnitude greater than both coal and oil.

France today is the world's second-largest producer of nuclear power, second only to the United States, as a result of earlier U.S. efforts. In January 1985, the United States had a total of 90 nuclear plants, generating 74.2 GigaWatts of electricity; France had 41 plants, generating 32.4 GW; and the U.S.S.R. had 46 plants with 24 GW. Japan had only 31 plants, generating 22.6 GW nuclear electricity—reflecting the dependence of the Japanese economy on oil and coal: To give an idea of the magnitudes involved, a rule-of-thumb is that 1 GigaWatt (1,000 MegaWatts) provides the electricity needs for a modern city of about 1 million inhabitants.

As of November 1985, the latest data available from the CEA showed that France had 45 plants installed, generating

40.4 MegaWatts electric, which brings the nuclear share to an impressive 70.7% of total electric power generation for the nation. As 20.7% of the remainder of electric power is hydro, the share of oil- and coal-generated electricity at this time is relatively tiny, at 8.6%. As of September 1985, 19 additional units are still under construction, including the huge 1,200 MW Super Phénix, which started low-power operation in January. France has "closed the full fuel cycle," with development of vital spent fuel reprocessing at La Hague and now the commercial Super Phénix fast breeder which can produce uranium as well as plutonium.

Of the more conventional pressurized water reactor (PWR)-type nuclear units, France has developed a standardized approach, which has enabled enormous savings and speed and efficiency of construction. As a result, in the 900 MW series, of which 32 plants have been constructed, total construction time has lessened from initially 78 months for Fessenheim-1, to 60 months for the latest units. Mass production, standardization of design, and centralization of all features of the nuclear program are critical.

France has simply done the rational thing in building its nuclear power grid, while the rest of the world chose to do the irrational. With construction times of five years per reactor, France is far and away the most efficient nuclear constructor in the world. Recent U.S. nuclear units, after the Three Mile Island accident in 1979, take 13-14 years until completion. And the safety and operational record of the French nuclear units is vastly greater than those in the United States, with a surprisingly high 79.4% operational availability. Recent U.S. figures hover around 59%, owing to forced retrofittings, shutdowns, and environmentalist obstruction. France has no anti-nuclear movement of importance!

Beginning in 1982, France signed with Westinghouse to acquire complete independence from the previous Westinghouse license for its basic PWR reactors. This has meant that Framatome and the French nuclear industry have been freed to initiate design improvements. The second-generation reactors are the huge 1,300 MWe units now beginning to come on line, which will characterize the EDF program into the 1990s. Three of these units came on line during the past year, bringing the total number of operational units to five. The next reactor generation, which is advertised as the first reactor of "purely French technology," is the 1,400 MWe series. The reactor will enable EDF and the French nuclear industry to be completely free of foreign design licenses and restrictions. The first of this improved design was started at Chooz in 1984.

The crisis in exports

Despite these exciting advances, the future of what can rightly be called the world's most important concentration of nuclear technology and skilled manpower, the French nuclear industry, is dangerously threatened. In 1983, the Mitter-

rand government decided to reduce the number of new orders to one or at most two reactors per year for the indefinite future. Framatome, the state-owned nuclear constructor, has capacity to turn out five to six per year. This underutilization presents a dangerous problem. Framatome had to be reorganized several months ago, when the giant nuclear-related steel and engineering firm, Creusot-Loire, went bankrupt in the largest industrial bankruptcy in French history. Creusot-Loire had owned 50% of Framatome. The government stepped in and Framatome was reorganized between CGE (40%), CEA (35%), EDF (10%), and smaller holders. These developments serve to underline the fragility of the industry if major new export orders are not forthcoming.

The press recently reported the tentative order that Framatome had secured to build two nuclear units in China. This, according to a CEA source, will probably be all France

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gets, as China wants to diversify suppliers and develop its own technology. According to the same source, nobody in the French nuclear industry is taking a serious dirigist approach to organizing the export of nuclear technology. There exists no organizational body with the mandate to secure export orders for an industry with such unique financing and political problems. The EDF is primarily interested in domestic electric supply, while, until a couple of years ago, Framatome was coasting along on domestic orders. The aggressive transfer of nuclear technology, including floating nuclear "turn-key" plants to North Africa and West Africa, is not only vital for the survival of the French nuclear industry; it is also an absolute prerequisite if the economic crisis in Africa is to be reversed.

In this respect, it is "cost-effective" in the real social sense, for the French government to virtually give away

nuclear technology to select developing nations, to serve as foci of energy-dense industrialization and desalination/agriculture complexes ("nuplexes"). The advantages to those economies could be vast and provide a springboard to industrialization. One special advantage of France is the extremely high concentration of dirigist state ownership of critical nuclear industries. This means that national self-interest can define export credit terms. For example, the value to France of maintaining full-capacity nuclear production, even sizeably expanded capacity for Framatome, development of Floating Nuclear Plant mass-production (which was pioneered 10 years ago by Westinghouse in Jacksonville, Florida, and abandoned), at a site, for example, in Marseille, the Mediterranean port center, could provide an obvious launching point for shipping FNPs, as well as other agro-industrial factories, from France to North Africa and the Middle East. Credit policy is the only major obstacle.

The long-standing French relation to such areas is a vital advantage. EDF and CEA already have extensive consulting

activities in numerous developing nations. EDF, for example, has a separate division, EDF International, with area branches for North Africa, Equatorial Africa, Subtropical Africa, Asia, and Latin America. They have already done extensive consulting with such countries as Morocco, Saudi Arabia, Niger, Senegal, Egypt, Nigeria, Zaire, Gabon, and Brazil, on aspects of developing national electric grids and power capabilities.

Similarly, the French aerospace and military technology industries have in recent years built up enormous ties with select developing sector nations, especially in the Middle East. This trade has built up an advanced network of technical knowledge among French engineers and technicians which could be a valuable adjunct to any coordinated technology transfer industrialization strategy for the developing world.

Development of such a state-directed export strategy for nuclear power infrastructure is vital, if the technological resources of French industry are to survive the present world industrial collapse.

An economic disaster: legacy of the Barre Plan

On March 16, French parliamentary elections will pit an opposition coalition of the Rassemblement pour la République (RPR) and the Union de la Démocratie Française (UDF), the so-called right-wing parties, against the Socialist Party of President François Mitterrand. Neither electoral bloc has an effective program to deal with the economic crisis. The Socialists enter the lists with a track record of economic disasters that include 11% unemployment and widespread bankruptcies; the joint election platform of the RPR/UDF echoes the "free market" dogmas of British Prime Minister Margaret Thatcher, and proposes selling off state-sector industry to the highest bidder.

The opposition's program centers around plans to "privatize" some 150 billion francs (about \$16 billion) worth of prime industry, banking, and insurance company assets, on the model of Thatcher's privatization of British government holdings, including North Sea oil. This boondoggle will provide only a one-shot injection of funds to the government, but the beneficiaries will be the foreign speculators like Brussels' BBL bank, which is tied up with Drexel Burnham, Lambert, the U.S. "junk bond" operators. The money used to buy the privatized firms would otherwise be available to finance capital expenditure in existing firms.

The current state of the French economy cannot be

understood without going back to the late 1970s and the savage industrial austerity blueprint named for its architect, the UDF's Raymond Barre, a member of Trilateral Commission, known among top French financial circles as the front-man for the Swiss-based insurance mafia of Geneva. Barre imposed a series of deliberate anti-industry measures when he was prime minister during the regime of President Valéry Giscard d'Estaing. The economic disaster of the French industrial collapse of the past seven years, is the direct result of the continuation of that Barre Plan by the Mitterrand regime. Indeed, recent French press reports have pointed to direct collusion between Barre and Mitterrand over the upcoming election.

What has the impact of the Barre Plan been on the industrial economy of France?

According to the French national statistical office, more than 1 million industrial jobs have "disappeared" since the first oil price shock in 1974. Nowhere are the real effects of the Barre Plan more visible than in the heart of the French economy—the destruction of the productive labor force. Even leaving aside the "repatriation" of hundreds of thousands of low-skill foreign "guest workers," since the downturn beginning in the late 1970s, official unemployment has soared to highest levels in the entire postwar period. In 1985 it reached an alarming 2,440,000 people—for a labor force of some 23 million, this means about 11%. If the effects of marginally employed population are included, as well as those on a subsistence existence who do not appear in official statistics, it is not difficult to understand why the unemployment issue is the single most important political issue for France today. At

Defense and aerospace

One of the most significant sectors for the economy of France in recent years has become the aerospace/military technology industry. The Malvinas War between Britain and Argentina highlighted for much of the world the existence of French advanced military technologies, including the Dassault Super Etendard carrier-based fighter and the Aerospatiale family of "fire-and-forget" anti-ship missiles. Companies such as Matra, which have developed extremely sophisticated laser-guided bombs and missile systems, are among the world's top rank in technology level and reliability. The recent French contract to develop the \$4 billion United States Army battlefield communications system, called RITA, in preference over a British bid, is only the most dramatic indication of the importance of the French military/aerospace sector.

It is misleading to speak of this as an industrial sector, as it tends to concentrate the most advanced industrial R&D of the entire economy, and tends to be dominated by state-

owned firms—CGE, SNECMA, Thomson—which are also extensively involved in the nuclear and other industries. As a result, the sector concentrates the advanced industrial technology which is most important for the future development of the French economic base.

Another characteristic of the military/aerospace sector is its high degree of integration with, especially, West German defense and technology-intensive aerospace firms. Thus, Aerospatiale has a joint development project with Messerschmidt-Bölkow-Blohm (MBB) to build the Roland anti-aircraft missiles—of which NATO just ordered \$700 million worth to defend its bases in the Federal Republic of Germany—as well as the ANS long-range anti-vessel supersonic missile. The two firms also are involved in joint development of combat helicopters, satellites, and the Airbus. Likewise, Dassault's Alpha Jet trainer and light attack plane has been designed and produced in cooperation with Germany's Dornier. Matra and MBB are involved in development of advanced weapons systems such as the Apache/CWS multi-

the onset of the effects of the Barre Plan and the U.S. high interest rates in the early 1980s. French unemployment was approximately half this figure, 1,450,000.

One of the most significant underlying changes in the potential producing power of France's economy, has been the shift away from productive employment in industry and agriculture. In 1954, the total economically active population of the nation was a relatively healthy 61% of the total active labor force. By 1982, this had dropped down to only 43%. What this reflects is a substantial growth in jobs in non-productive "overhead" service or bureaucratic paper-shuffling areas. Since the 1950s, the number of agricultural workers has dropped by more than half, from 3,900,000 down to 1,800,000 in the last two years. But these workers have not gone into the productive manufacturing sector. The number of clerks and secretaries doubled to more than 4 million in this same time.

Nowhere is the disastrous state of the French industrial economy more evident than in the steel industry. Under the fiat of the collective capacity reduction scheme of the early 1980s, the infamous Davignon Plan, named for Viscount Etienne Davignon, then European Community Commissioner for Industry, France has collapsed steel production from its high of 27 million tons in 1974, at the point of the first oil price shock, down to an estimated 18 million tons last year, according to the French Steel Association. This amounts to a collapse of 33%! At the same time, employment in this basic industrial sector collapsed by almost 50% under the Davignon Plan/Barre Plan regime, from 160,000 down to 85,000 last year. Steel, one of the most energy-intensive industries, was severely af-

ected by the combined 1974 and 1980 oil price shocks on the cost of energy. France's total oil import bill in 1984, before the recent price fall, equaled almost the entire value of agricultural exports.

Related to both the oil question and the steel collapse, has been the collapse of the French automobile companies. The huge state-owned Renault firm had financial losses in 1984 of a staggering 12.6 billion francs, and is in the process of laying off 21,000 of its labor force over the next months. The number of vehicles produced since 1979, when the Barre Plan austerity began to constrict domestic credit and wages, has fallen fully 17%, down to slightly more than 3 million vehicles in 1984. Industry indications are that the disaster continued into 1985. France is the world's fourth-largest vehicle producer after Japan, the United States, and West Germany, and the collapse of this sector represents a major collapse of world transportation capacities.

The second major area of loss for French industry has been the collapse of construction projects in developing-sector nations, especially in Africa and the Middle East. In 1984, the giant French engineering and construction group, Creusot-Loire, declared bankruptcy. One cause was the collapse of export construction contracts. France historically has been one of the largest contractors in the OPEC Middle East countries, as such projects accounted for fully 10% of the 1982 monetary value of export earnings. The collapse of the developing-sector market in the last few years has been severe. Total capital goods export fell by over half, from 94 billion francs in 1982 to 50 billion francs in only two years.

purpose dispenser weapon. The French aerospace company SEP produces solid propellant rocket motors for meteorological and observation satellites, in cooperation with MAN of Germany.

France in recent years has become the third-largest exporter of military and aerospace technology in the world, following the Soviet Union and the United States, in that order. With a total labor force in 1983 of some 127,270, France's aerospace/military industry is exceeded in Europe only by Britain in terms of number employed, which has 218,000. But when measured in terms of productivity, by gross sales per number employed, French aerospace exceeds British by almost two to one. France had a ratio of 575 million francs to Britain's 312 million francs.

Perhaps the most dramatic single area of French economic developments in the troubled 1979-85 period, has been the growth in the importance of aerospace/military sales. According to official industry figures published by GIFAS, the French Aerospace Industry Group, export deliveries for the industry have grown from 15.6 billion francs in 1979 to slightly more than 42 billion francs in 1984, with preliminary estimates for 1985 indicating approximately the same as 1984. This represents a 262% growth measured in monetary terms. Discounting for monetary factors such as currency changes in this time, the industry has clearly emerged as a major one in world terms.

Two things should be noted, however, which underscore the vulnerability of even this sector of the French economy: If we compare the ratio of export deliveries to that for new export orders for the 1979-85 period, we find a dramatic shift has occurred. Whereas in 1979, new orders received were higher than deliveries, reflecting a healthy future growth perspective, beginning in 1983 and continuing through at least 1984, new orders fell significantly below deliveries. This means that the industry is working down its back orders, and new orders are slowing down in the last half of the 1980s. This reflects the general stagnation of the world export economy, for all industry, within which France has competed extremely well, despite the collapse of especially Middle East and Ibero-American markets since 1982. The second point to be noted is that the rate of rise for export sales for the French industry has now flattened to zero. That is, there was essentially no net growth in monetary terms this year, the first time since 1975.

Capital-intensive agriculture

France is far and away the premier agriculture producer of the European Community, with fully 25% of total EC production in 1983. The present technological base began with General de Gaulle's concerted effort in the 1960s to tackle the traditional backwardness of French farming, which at that time was so poor as not to provide even for national needs. Under more than two decades of EC Common Agriculture Program (CAP) subsidy payments, with massive in-

vestment in technology since the 1960s, France today is the world's second-largest agricultural exporter (the United States is still number one), and with 32 million hectares of land under cultivation, has fully 31% of total EC agricultural land.

Beginning in 1955, when some 8,170,000 Frenchmen earned their living from the farm, equal to 18.5% of the total working population, a reorganization of French agriculture occurred, backed by investment in capital and energy-intensive technologies, to produce phenomenal increases of productivity. As a result, by 1984, this percentage of the labor force in farming has been reduced from 18.5 to 7.3%, or 4,020,000 million farmers, according to the French Ministry of Agriculture. Furthermore, the average size of the French farm-holding during this same period has nearly doubled, from 13.3 hectares in 1955, to 23.0 today. While this still means many quite small holdings and a few large ones, the direction is toward more optimal medium size.

This French food-producing capacity today must be considered one of the world's most important strategic resources, more so than ever in light of the recently-signed U.S. "free market" farm bill, slashing agriculture subsidies.

Twice the U.S. yields

Yields of French agriculture are among the world's highest. To give one example, for the category of wheat yields, France in 1983 produced an average of 51.2 deci-tons/hectare (1 dt = 100 kg). By contrast, the world's largest wheat producer, the United States, has a yield of only 26.5 dt/ha. While some of the tiny EC agricultural producers, especially Holland, and to an extent Denmark, and regions in north Germany may produce higher yields for select grains, France is clearly a vital world food resource of extreme importance.

There exist special unique credit facilities which have until now somewhat insulated French agriculture from the world credit crises of the past seven years. All farm credit, almost without exception, is organized via the pervasive farm cooperatives and regional organizations into the huge Caisse Nationale de Crédit Agricole, the national cooperative agriculture credit institution which in 1983 had total resources of some 600 billion francs (200 billion deutschmarks), making it one of the world's largest financial institutions, if not the largest. By comparison, Deutsche Bank, Germany's largest, in 1983 had assets totaling 117 billion marks. Because of the specialized agriculture basis of this cooperative bank, it charges subsidized interest rates to farm borrowers, with no reference to "market" rates. This, plus the structure of the complex EC price subsidies, has insulated French agriculture from the most severe impact of high interest rates. Nonetheless, the hyperinflation of world petroleum prices has meant severe price problems for the energy-intensive French farming, primarily through vastly higher costs for fertilizer, as well as for fuel. Preliminary results for the 1985 French wheat harvest indicate that the total crop level dropped some 12%

FIGURE 1

France's capital-intensive agriculture

	Million tons	Grain yields (100 kg/ha)
1946	6.8	16.5
1955	10.4	21.0
1970	12.9	35.0
1980	23.2	52.0
1983	24.4	52.0
1984	32.0	65.0

FIGURE 2

French agricultural production (1984)

	Billion francs
Cereal grain and derivatives	44.3
Wines and beverages	24.5
Meat and livestock	19.1
Milk and dairy	15.4
Fruit and vegetables	7.2
Sugar	6.9
Other food products	24.3
Total	141.7

France is the world's second-largest wine producer by volume; wine exports account for approximately 20% of total French farm exports. Most of this (66%) is sold within the European Community, with Germany the largest market, followed by the U.K. and Benelux. In terms of beef, France is the premier meat producer of Europe, with over 30% of total in 1983, and came in sixth in world beef production, measured in tons.

over record 1984 to 29 million tons, because of lower yields.

Figures for actual farm income, as in the rest of the EC, have fallen in the past decade, under the impact of generally higher energy costs and the performance of the world markets. The general tendency, under aggravated economic pressures of recent years, has been increasing captivity to a world export-market-determined price structure, which in turn was controlled by the major grain cartel companies. Over the past decade, according to French farming sources, the cartelization process in the EC has been such as to deliberately foster a situation where a political problem of so-called food surplus is created, in turn placing enormous pressures on medium and small family farms to "produce their way out" of the immediate price squeeze, thus aggravating the problem.

In 1984, total French agriculture revenues were 273.4 billion francs, some 8% higher than the disaster year 1983, with 252.5 billion francs; this was partly owing to a record grain harvest. The primary problem, according to farmer sources, is that in the past decade, farmers have become

captive to the vagaries of the world export trade market, rather than to national or even regional markets. The single most important marginal influence on EC agriculture, especially in recent years, has been the massive Soviet purchases of grain on world markets. In 1984, some 17.4% of total French agriculture was exported. This merely offset the dollar value of French petroleum imports, since the rise of the dollar meant the effective rise of dollar-priced oil imports for France, despite the OPEC price decline.

The monetary value in 1984 of French agriculture and processed food exports was 124.4 billion francs. The largest customer for French agricultural exports was Italy (20 billion francs) and Germany (19 billion francs), followed closely by Benelux (14 billion francs). The value of exports selectively since 1975:

	Billion francs
1977	36.5
1977	48.3
1980	79.7
1983	124.4
1984	141.7

These numbers must be correlated with the percentage of total farm revenue which this export represents. This figure has remained remarkably stable, hovering between 16% in 1975 and 17.9% in 1983. The significant point for the French farmer, however, must be the relative deterioration of domestic market prices, thus making the relative importance of a 17% export share in 1984 far greater than in 1975.

The near doubling of the yield from 1970, at the initiation of the de Gaulle modernization effort, to 1984, shows the impact of the policy (see Figure 1). Today, France, with this capital-intensive agriculture, produces 40% of EC grain. The large jump from 52 dt/ha in 1980-83 up to 65 dt/ha in 1984, largely reflects massive intensification of fertilizer inputs.

With EC proposals for the next farm budget price support subsidies under debate, against the backdrop of record levels of grain, beef, dairy, and wine in EC storage stock, pressure is enormous and growing to adopt savage cuts in price supports. The current proposal of the EC agriculture commissioner's staff, according to European farm organizations, would slash fully 12-15% from EC farm income for grain producers. The impact of cuts of such magnitude on French farming would begin to approximate the disaster in U.S. agriculture of recent years, though the underlying structure of the debt is quite different.

France at this juncture is one of the world's most important industrial and agricultural resources, which is poised at the crossroads of major international economic catastrophe or, regaining the vision of a de Gaulle, reversing the slide into obsolescence and collapse, using its experience as a former colonial power, to launch infrastructure- and technology-transfer on a massive scale to entire regions of Africa, the Middle East, and Asia.